
WHO Growth Charts – Frequently Asked Questions

1) What are the benefits of using the WHO growth charts?

- The WHO standards establish the growth of breastfed infants as the norm. Breastfeeding is the recommended standard for infant feeding. The WHO charts reflect growth patterns among children who were predominantly breastfed for at least 4 months and still breastfeeding at 12 months.
- The WHO growth charts are **standards**; they identify how children **should** grow when provided optimal conditions (appropriate nutrition, access to health care and immunizations, no smoking).
- The WHO standards are based on a high-quality international study designed specifically for creating growth charts. The same children were measured at frequent intervals throughout the study.

2) Why is WIC changing to the WHO growth charts for ages birth to 24 months, and continuing to use the CDC growth charts for ages 2-5?

- CDC and AAP developed the following recommendations:
 - The WHO growth standard charts should be used for children younger than 2.
 - The CDC 2000 growth reference charts should be used for children aged 2 through 19 years, because these charts can be used continuously up to age 20.
- The WHO growth standards cover ages birth to 5 years of age. However, for children ages 2 to 5 years, CDC states that the WHO charts offer little advantage over the CDC charts as the data collection methodology was similar. For example, the data used to construct the curves are cross-sectional and sample selection was similar.

3) Will local agency staff need to do anything differently in ISIS with the change to the WHO growth charts?

- Local agency staff will not have to do anything differently. The only changes that staff will notice in ISIS will be:
 - On the “Growth Chart” (height and weight) screen, the dates for anthropometric information will be in red from October 1, 2012 through March 31, 2013. This is just to remind staff that ISIS is now calculating the percentiles using the WHO growth standards.
 - ISIS will automatically assign the risk codes, including the new risk codes that staff will not have seen before October 1, 2012.

4) Why will short stature become a high risk condition?

- The short stature risk criteria have been “tightened up” – that is, the percentile cutoffs have been changed, so many fewer children will be identified as having this risk. The ones that are identified as having short stature should be investigated further.
- We know that short stature may be normal based on a child’s genetic potential, but it can also be an indicator of malnutrition or medical conditions. So it’s appropriate for an RD to review the child’s growth and other information and refer to the child’s doctor if indicated.

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5) What if health care providers are still using the “old” growth charts?

- If the participant’s health care provider is not using the WHO growth charts, or if the information about the child’s growth from the provider’s office is different from the information WIC gives, there are several options for WIC staff (see Trainee Workbook page 16).
- Also, State WIC is developing a handout for WIC staff to share with health care providers, explaining WIC’s transition to the WHO growth charts.

6) Can the WHO standards programmed into ISIS be used to track an infant’s growth on a frequent basis?

- ISIS entries can be made daily. However, in ISIS weights are converted to quarter pounds and lengths to quarter inches. So ISIS will not be very sensitive to slight changes in weight and length. See WPM Appendix 970-80:

<http://www.cdph.ca.gov/programs/wicworks/Documents/WPM/WIC-APP-970-80.pdf>

- If there is concern about an infant’s growth, the appropriate WHO growth chart can be printed out and the weights and lengths can be plotted on the chart.

http://www.cdc.gov/growthcharts/who_charts.htm

7) Is overweight in infants related to their weight and health later in life?

- Infants who are at the highest end of the distribution for weight or body mass index, or who grow rapidly during infancy, are at increased risk of subsequent obesity.
- Please see the following references for further information:

<http://www.ncbi.nlm.nih.gov/pubmed/16227306?dopt=Citation>

<http://www.ncbi.nlm.nih.gov/pubmed/15836465>

<http://pediatrics.aappublications.org/content/109/2/194.abstract>

<http://aje.oxfordjournals.org/content/165/8/919.full.pdf>

<http://www.ajcn.org/content/87/6/1776.full>

<http://www.ncbi.nlm.nih.gov/pubmed/19922033>

<http://circ.ahajournals.org/content/111/15/1897.full>

<http://www.jfponline.com/Pages.asp?AID=7685>

<http://www.hsph.harvard.edu/obesity-prevention-source/obesity-causes/prenatal-postnatal-obesity/>

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8) What is the role of genetics vs. environment in children's growth in weight and height?

- Many factors contribute to a person's weight. The current worldwide obesity epidemic is mainly due to increased consumption of calorie-dense diets and reduced physical activity. However, not everyone exposed to an obesogenic environment becomes obese; a person has to have a genetic propensity for weight gain and obesity in order for the environment to cause obesity. Studies show that 50% to 90% of variations in BMI are due to genetics, with the remaining variance due to environmental influences.

<http://www.ncbi.nlm.nih.gov/pubmed/9519560>

<http://www.ajcn.org/content/87/2/398.full>

<http://www.ajcn.org/content/84/3/646.full.pdf>

- Height is also influenced by many factors. Many genes are involved, including those for: growth hormone, cell receptors for growth hormone, bone proportions, and timing of hormone release. Many interactions with the environment also influence height, including nutrition during pregnancy and growth years, exposure to cigarette smoke and alcohol before birth, birth order, and general health or disease during growth years. It appears that we are born with a genetic potential for height, and then the environment exerts its effects as we are growing. About 60% to 80% of the difference in height between individuals is determined by genetic factors, with the remaining variation determined by environmental effects, mainly nutrition.

<http://www.scientificamerican.com/article.cfm?id=how-much-of-human-height&page=2>

<http://www.ncbi.nlm.nih.gov/pubmed/19818695>